

# [METHOD AND APPARATUS FOR PRODUCING NITROGEN]

## Abstract of Disclosure

CMS adsorbents having suitable indexes are used to improve greatly the performance of nitrogen-producing apparatuses where nitrogen is obtained from the air with a PSA method, so as to improve the efficiency of nitrogen production. A nitrogen PSA apparatus is formed with two adsorbing columns where an adsorption step and a regeneration step are performed alternatively and periodically. The adsorption step is for adsorbing oxygen and conducting nitrogen to a product tank with the supply of compressed air from an air compressor, and the regeneration step for releasing the adsorbed gas after the adsorption step. The adsorbing columns are filled with a carbon molecular sieve (CMS) that selectively adsorbs oxygen as an adsorbent. The CMS adsorbs an oxygen/nitrogen amount of 50% of the saturated adsorption amount with a period  $T_0/T_N$  starting from oxygen/nitrogen supply, wherein  $T_0$  is 5~10 seconds and  $T_N$  is larger than  $T_0$  by more than 41 times.